

# The Content and Correlates of Belief in Karma Across Cultures

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## Abstract

Karmic beliefs, centered on the expectation of ethical causation within and across lifetimes, appear in major world religions as well as spiritual movements around the world, yet they remain an underexplored topic in psychology. In three studies, we assessed the psychological predictors of Karmic beliefs among participants from culturally and religiously diverse backgrounds, including ethnically and religiously diverse students in Canada, and broad national samples of adults from Canada, India, and the United States (total  $N = 8,996$ ). Belief in Karma is associated with, but not reducible to, theoretically related constructs including belief in a just world, belief in a moralizing God, religious participation, and cultural context. Belief in Karma also uniquely predicts causal attributions for misfortune. Together, these results show the value of measuring explicit belief in Karma in cross-cultural studies of justice, religion, and social cognition.

## Keywords

justice beliefs, religion, morality, culture and cognition, individual differences

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Many people across the world believe that their actions and experiences are causally connected through the law of Karma: good actions cause good things to happen and bad actions cause bad things to happen, either at a later time in one's life or in a future lifetime. Karmic causality is central to the worldview of several Asian religious traditions that have more than 1.5 billion adherents worldwide (Pew Research Center, 2015) and Karma-like beliefs appear in spiritual and New Age movements rapidly growing in the West (Bender, 2010). Despite this prevalence, rigorous research on the psychology of Karmic beliefs is lacking (consistent with a broader underrepresentation of non-Western cultures within the psychological literature; Henrich, Heine, & Norenzayan, 2010; Norenzayan, 2016). To help overcome this gap, we developed and validated a self-report measure of individual differences in belief in Karma, and tested its correlates and predictive implications in multiple samples across several cultures. Results tested whether belief in Karma is distinct from conceptually related-constructs (belief in a just world, belief in a moralizing God) and uniquely predicts expectations about the consequences of individuals' actions. Results highlight the relevance of Karmic beliefs within the psychology of justice, morality, and religious cognition.

## What Is Karma?

Karma is integral to several religious traditions that arose in India and spread throughout Asia, including Hinduism,

Buddhism, and their offshoots (e.g., Jainism). The doctrine of Karma, shared by these traditions, integrates belief in reincarnation with the belief that people's actions—good or bad—lead to valence-congruent outcomes at a later point in time, with the implication that individuals eventually get what they deserve. Within this Karmic belief system, the connection between moralized actions and Karmic consequences is often causally opaque and may manifest across supernaturally-long timescales, such as when individuals' health, economic outcomes, or morphology (e.g., gender, animal form) is determined by their prosocial or antisocial behavior in previous lifetimes (Bronkhorst, 2011; Obeyesekere, 2002).

## Relations Between Karma, Justice Beliefs, and Beliefs in Supernatural Forces

Although there is little rigorous psychological research on Karma, there are sizable literatures on other constructs that share essential elements of Karmic doctrine: (a) belief in fairness and justice (e.g., belief in a just world) and (b) belief

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in supernatural entities (e.g., God) that reward and punish humans for their moral behavior. Like Karmic beliefs, other justice beliefs—which tend to lack overt supernatural elements—are characterized by the expectation that actions lead to valence-congruent outcomes, such that good people experience success, bad people experience misfortune, and nice people are luckier than mean people (Banerjee & Bloom, 2017; Baumard & Chevallier, 2012; Callan, Sutton, Harvey, & Dawtry, 2014; Converse, Risen, & Carter, 2012; Hafer & Rubel, 2015; Lerner, 1980; Lucas, Alexander, Firestone, & LeBreton, 2007; Olson, Dunham, Dweck, Spelke, & Banaji, 2008). Analogously, belief in God—like belief in Karma—is characterized by the belief that there exists an omniscient supernatural force that attends to the morality of human actions and intervenes in human affairs (a similarity that suggests that similar evolutionary and/or cognitive processes may underlie both of these supernatural beliefs; Laurin & Kay, 2017; C. White, Sousa, & Prochownik, 2016; Willard & Norenzayan, 2013).

Given these similarities, belief in Karma is likely to correlate with other supernatural and/or religious beliefs (e.g., belief in God) and with secular justice beliefs (e.g., belief in a just world). In addition, given the importance of social learning in shaping individuals' beliefs (Gervais, Willard, Norenzayan, & Henrich, 2011; Lanman & Buhrmester, 2017), belief in Karma should also be influenced by cultural traditions that expose individuals to Karmic theology (Carlisle, 2008). It is plausible that, at a psychological level of analysis, belief in Karma is largely reducible to these variables (belief in justice, belief in a supernatural force, and exposure to Karmic theologies such as Hinduism or Buddhism). For instance, it has been proposed that supernatural justice beliefs of various kinds exist because they fit with evolved intuitions about interpersonal justice (Baumard & Boyer, 2013; Johnson, 2015; Slone, 2004), and that cultural learning processes account for the specific features of these beliefs (e.g., belief in Karma vs. belief in a morally concerned God). If so, then belief in Karma would be strongly predicted by a combination of existing measures assessing justice beliefs, supernatural beliefs, and cultural background. This line of reasoning also suggests that belief in Karma is unlikely to uniquely predict social judgments (e.g., expectations about future outcomes experienced by people who violate social/moral norms) after controlling for those other measures.

Alternatively, it is also plausible that belief in Karma has a distinct cultural history that makes it not reducible to these other variables, and which has implications for its cognitive representation and role in social judgments. Karma is conceptually distinct from other justice beliefs by including nonobvious causal connections between actions and Karmic outcomes over long timescales—longer even than the human life span. And Karma differs from most other supernatural forces (e.g., God) by its putative lack of agentic form and its highly circumscribed domain of operation. Karma lacks any role in nonmoral affairs, does not demand devotion, and in

many religious traditions Karma is believed to operate independently—or in the absence—of gods (Bronkhorst, 2011; Hieber, 1983). In addition, belief in Karma does not require adherence to a Karmic religious tradition (as indicated by the willingness of many agnostic Westerners to attribute outcomes to Karma), nor is a strong belief in Karma necessarily present for all adherents to Karmic religions (e.g., who may focus instead on the social, ritual, or devotional theistic aspects of their religion; Fuller, 2004). If Karmic beliefs are *not* reducible to belief in justice, belief in a supernatural force, and exposure to Karmic theologies, then those variables are likely to explain only a part of the variance in belief in Karma. Further, belief in Karma may uniquely predict relevant social judgments (e.g., expectations about the future outcomes experienced by people who engage in good or bad actions) even after controlling for those other variables.

It is also plausible that the empirical relations between beliefs in Karma, justice, and supernatural forces may vary across cultures, depending on the dominant religious tradition. For example, Hinduism promotes the doctrine of Karma while also encouraging beliefs in many gods, whereas Christianity typically rejects one of Karma's essential elements—reincarnation—while promoting belief in a morally concerned God. Consequently, the correlation between belief in Karma and belief in God (and religiosity more generally) is likely positive among Hindus, but not among Christians.

## Overview of Current Research

To facilitate rigorous psychological inquiry into belief in Karma, we (a) developed and validated a new self-report measure of belief in Karma,<sup>1</sup> (b) assessed the empirical relations between belief in Karma and a wide range of other variables, and (c) tested the extent to which belief in Karma uniquely predicts conceptually relevant social judgments. We did so across three studies, conducted on large samples of North American and Indian participants. These culturally diverse samples allowed us to (a) assess the utility of the new self-report measure in different cultural contexts, (b) test the replicability of findings, and (c) test the possibility that cultural context might moderate relationships between Karmic beliefs, justice beliefs, and supernatural beliefs.<sup>2</sup>

### Pilot Study: Self-Report Measure Assessing Belief in Karma

To create a questionnaire assessing individual differences in belief in Karma, we developed 16 self-report items (Table 2) that were attentive to the defining elements of the doctrine of Karma. Four items assessed belief in reincarnation. Five items assessed belief that people's actions lead to valence-congruent outcomes at a later point in time. Four items assessed the integration of those beliefs (e.g., "If a person does something bad, even if there are no immediate consequences, they will be punished for it in a future life"). Three

**Table 1.** Demographic Composition of Each Sample.

	Study 1		Study 2		Study 3	
	Canadian students (Sample 1)	Canadian students (Sample 2)	Canadian adults	Indian adults	American Mechanical Turk	Indian Mechanical Turk
N	3,193	3,072	1,000	1,006	416	309
Gender						
Female	74%	74%	51%	51%	62%	30%
Male	26%	26%	49%	49%	38%	70%
Age <i>M</i> ( <i>SD</i> )	20.12 (2.91)	20.13 (2.89)	46.69 (15.24)	38.62 (13.54)	36.71 (12.26)	32.82 (9.63)
Ethnicity						
Caucasian	25.8%	26.3%	82.9%	0.0%	75.4%	0.3%
Asian	61.3%	58.3%	9.3%	78.2%	7.0%	95%
Other or not provided	12.9%	15.4%	7.8%	21.8%	17.6%	4.7%
Median income	—	—	US\$40,000-US\$60,000	500,000-1,000,000 INR	—	—
Education						
Years <i>M</i> ( <i>SD</i> )	—	—	13.68 (6.77)	16.57 (5.01)	—	—
% with postsecondary degree	—	—	72.7%	96.1%	65.9%	96%
Religion						
Christian	29.9%	28.1%	57.9%	6.9%	52.7%	12.3%
Nonreligious	49.7%	53.2%	30.7%	1.3%	38.9%	3.4%
Hindu	2.2%	2.3%	1.1%	78.0%	1.2%	75%
Buddhist	6.1%	5.2%	2.6%	0.2%	1.0%	0.0%
Other	12.1%	11.2%	10.3%	13.8%	10.6%	9.3%

additional items explicitly assessed belief in the concept of “Karma.” Respondents reported their agreement with these statements on 5-point scales.

In a pilot study, we administered a questionnaire containing these 16 items to a sample of 280 Americans—54% female; mean age = 35.77 (*SD* = 12.21); 78.5% Caucasian, 5% Asian; 41% Christian, 34% nonreligious, recruited through Amazon’s Mechanical Turk. After reverse-scoring appropriate items, we computed a single belief in Karma score as the mean response across all items.

Results revealed that the 16-item belief in Karma questionnaire had a high level of internal reliability (Cronbach’s  $\alpha = .94$ ), and showed a largely normal distribution, without ceiling or floor effects ( $M = 2.76$ ,  $SD = 0.88$ ).

Participants in the pilot study also completed several other questionnaires, which provided preliminary evidence showing that belief in Karma was positively correlated with belief in God ( $r = .27$ ) and belief in the afterlife ( $r = .43$ ), as well as with religiosity ( $r = .12$ ), and spirituality ( $r = .32$ ),  $ps < .05$ . Belief in Karma was not significantly associated with religious attendance ( $r = -.02$ ), age ( $r = -.01$ ), or gender ( $r = .01$ ).

Based on these results, we decided to use this questionnaire, without alteration, in the primary studies reported below.

## Study 1: Canadian Students

### Method

**Participants.** We collected data from two samples ( $ns = 3,193$  and 3,072) of Canadian undergraduate students who

participated in the psychology department’s Human Subjects Pool during two separate semesters. At the beginning of each semester, students were given the option to complete an online survey, and our sample size was determined by including all students who completed this questionnaire by the end of the semester (Sample 2 also excluded 38 students who failed an attention check question placed within the survey).<sup>3</sup> As can be seen in Table 1, students were younger than the general Canadian population, mostly female, and identified their cultural background as primarily Asian or European. The sample was predominantly Christian or nonreligious, although with substantial minorities of Karmic religions also represented.

**Materials.** Participants completed the following measures as part of a larger survey.

**Belief in Karma.** Participants completed the 16-item belief in Karma questionnaire described in the Pilot study.

**Justice beliefs.** Participants in Sample 1 completed a six-item measure of belief in a just world (Dalbert, Montada, & Schmitt, 1987;  $\alpha = .74$ ).

**Religious beliefs.** Participants in Sample 1 completed items assessing belief in God (“I believe that God exists,” “God is important in my life”) and religiosity (“I am a religious person”). They also indicated whether they would describe themselves as “Religious,” “Spiritual but not religious,” or “neither spiritual nor religious.”

**Table 2.** One-Factor EFA Loadings.

	Study 1		Study 2	
	Canadian students	Canadian adults	Indian adults	
1. Karma is a force that influences the events that happen in my life	.66	.76	.64	
2. Karma is not something real*	.54	.56	.22	
3. Karma is a force that influences the events that happen in other people's lives	.66	.73	.59	
4. When people are met with misfortune, they have brought it upon themselves by previous behavior in their life	.63	.63	.71	
5. When people experience good fortune, they have brought it upon themselves by previous behavior in their life	.66	.67	.72	
6. If a person does something bad, even if there are no immediate consequences, they will be punished for it in some future time in their life	.67	.68	.61	
7. When someone does a good deed, even if there are no immediate consequences, they will be rewarded for it in some future time in their life	.63	.72	.58	
8. In the long-run, good things happen to good people and bad things happen to bad people	.47	.51	.48	
9. When people are met with misfortune, they have brought it upon themselves by behavior in a past life	.81	.74	.77	
10. When people experience good fortune, they have brought it upon themselves by behavior in a past life	.82	.78	.81	
11. If a person does something bad, even if there are no immediate consequences, they will be punished for it in a future life	.79	.75	.72	
12. When someone does a good deed, even if there are no immediate consequences, they will be rewarded for it in a future life	.79	.76	.69	
13. After people die, they are reborn in a new body	.62	.68	.64	
14. There is no such thing as rebirth or reincarnation*	.54	.57	.32	
15. People's moral behavior during their current life influences their rebirth in a future life	.68	.77	.73	
16. The ultimate goal of life is freedom from the cycle of birth and death	.50	.52	.57	
Variance explained by factor	44%	47%	40%	

Note. Items marked with an asterisk are reverse-scored. Items were accompanied by a 5-point response scale (1 = *strongly disagree*; 5 = *strongly agree*). In Study 3, we derived two separate subscales from this longer questionnaire: belief in Karmic Reincarnation (Items 1, 10, 11, and 15) and belief in Karmic Justice within one lifetime (Items 4-8). These subscales each have high reliabilities, are highly correlated with each other, and have similar patterns of association with other beliefs and demographics. EFA = exploratory factor analysis.

*Other variables.* Participants provided demographic information, including age, gender, cultural background, and religious background. They also reported their political orientation (ranging from *strongly liberal* to *strongly conservative*).

## Results and Discussion

*Psychometric analyses of the Belief in Karma Questionnaire.* Before assessing its empirical relations with other variables, we first conducted analyses to assess the psychometric properties of the belief in Karma questionnaire. These analyses included data from all participants in Sample 1 plus the subset of participants in Sample 2 who provided unique e-mail addresses, thus providing the maximum possible sample size ( $n = 5,066$ ) while excluding possible overlap between the two samples (i.e., excluding Sample 2 participants present in Sample 1 or who did not provide an e-mail address).

*Factor structure.* We conducted an exploratory factor analysis, with maximum likelihood method of estimation and oblimin rotation. We explored one-, two-, three-, four-, and five-factor solutions, to identify a pattern of factor loadings that was consistent across samples and demographic subgroups (e.g., different cultural backgrounds) and was interpretable (based on the content of the items). Multifactor solutions failed to provide a solution that was consistent or interpretable: several items cross-loaded on multiple factors and specific factor loadings were inconsistent across samples. Instead, a one-factor model provided a reasonably good solution: In all samples and subgroups, all items were positively intercorrelated and loaded moderately strongly on a single underlying factor (Table 2).<sup>4</sup> Alternative methods of determining the number of factors (parallel analysis, Very Simple Structure (VSS) method, Minimum Average Partial (MAP) criterion) also indicated that a one-factor solution was the best fit for these data (see Supplemental Material).

We also conducted confirmatory factor analyses. First, we added correlated residuals between the two reverse-scored items (to account for shared method bias) and between similarly phrased pairs of items that explicitly identified the same time scale (e.g., outcomes resulting from actions in past lives). A one-factor solution did not provide a good fit for the data,  $\chi^2(99) = 8,374.06$ ,  $p < .001$ , comparative fit index (CFI) = .83, root mean square error approximation (RMSEA) = .13. Therefore, we specified a four-factor model based on conceptual distinctions between four subsets of items representing (a) belief in reincarnation; (b) belief that actions cause valence-congruent outcomes within an individual's lifetime, (c) belief that actions cause valence-congruent actions in future lifetimes, and (d) belief in the concept of Karma more generally. This four-factor model provided a good fit to the data,  $\chi^2(93) = 2,496.38$ ,  $p < .001$ , CFI = .95, RMSEA = .07. The four factors were highly correlated ( $r$ s ranged from 0.61 to 0.74), and the model had substantially reduced fit if uncorrelated factors were specified (see Supplemental Material).

The preceding results indicate that the 16 items assess multiple underlying constructs, but that these underlying constructs are highly related and meaningfully integrated into a single coherent belief. Next, we conducted tests of measurement invariance across participant subgroups with different religious and cultural backgrounds. Measurement invariance assesses whether observed mean differences between groups can be attributed to actual differences, or if they merely result from a different manner of responding to scale items (Milfont & Fischer, 2010; Wu, Li, & Zumbo, 2007). It is assessed by conducting a series of multigroup confirmatory factor analyses with increasingly strict constraints on factor structure, factor loadings, intercepts, and residuals to be the same across groups. Measurement invariance is established when adding these additional constraints to the confirmatory factor analysis (CFA) model (identified above) does not substantially decrease model fit. We compared (1) students from Asian cultural backgrounds to those from non-Asian cultural backgrounds and (2) students affiliated with Karmic religions to students with other religious affiliations. In each comparison, adding additional constraints had only a minor impact on model fit (e.g.,  $\Delta CFI \leq .002$ , below the cut-off point recommended by Cheung & Rensvold, 2002, see Table S3 in the Supplemental Material). These results attest to measurement invariance of the belief in Karma questionnaire, indicating that it is comparable across different populations.

In sum, the factor analytic results indicate that—at a psychological level of analysis—the definitional components of Karma (belief in reincarnation and belief in valence-congruent consequences of moral actions) are coherently integrated into a more global construct representing belief in Karma, and that the 16-item questionnaire can be used to assess this belief in individuals from varying cultural backgrounds. Therefore (after reverse-scoring appropriate items), we computed a single “belief in Karma” score as the mean response across all 16 items to use in subsequent analyses.

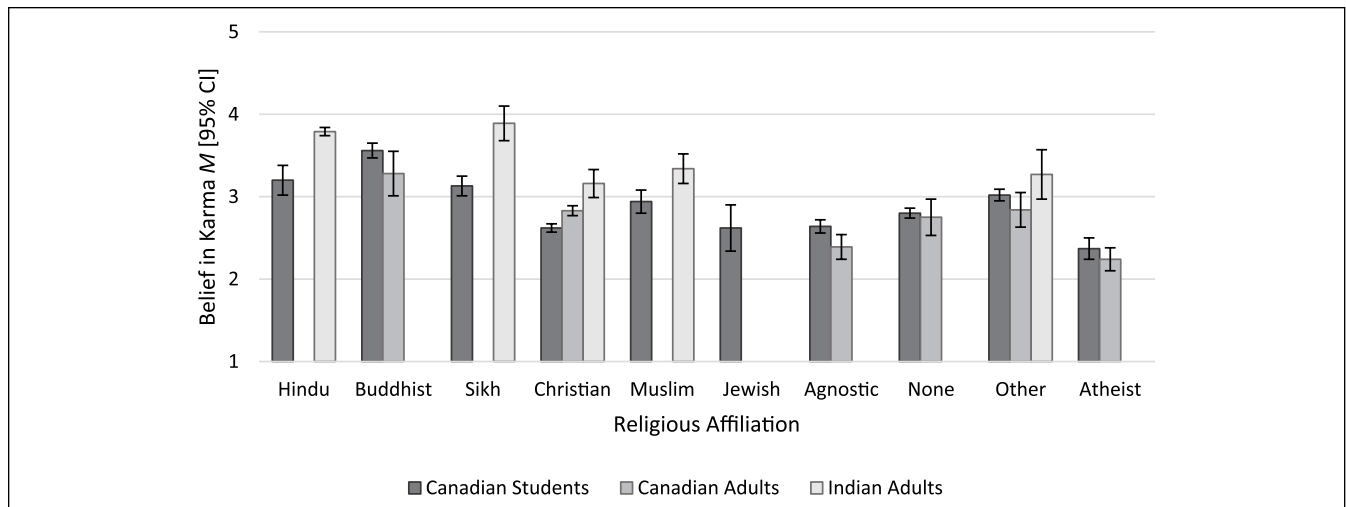
**Internal consistency and test–retest reliability.** The 16-item belief in Karma measure had high internal consistency reliability (Cronbach's  $\alpha = .92$ ). Test–retest reliability was assessed from two subsamples. A subset of Sample 1 ( $n = 210$ ) completed the belief in Karma questionnaire at a second time-point during the same semester (while completing one of three unrelated studies; mean time between responses = 50 days;  $SD = 25.58$ ). The test–retest correlation was  $r = .66$ , 99% confidence interval (CI) = [.55, .75]. In addition, 454 participants were part of both Sample 1 and Sample 2 (mean time between responses = 246 days;  $SD = 21.51$ ). The test–retest correlation was  $r = .79$ , 99% CI = [.74, .83]. Time elapsed between responses did not moderate the size of the test–retest correlation.

**Known-groups validity: Religious and cultural group differences.** We tested mean differences in belief in Karma scores across different religious groups. As seen in Figure 1, scores were higher (and generally above scale midpoint) among adherents to religions that traditionally endorse Karmic beliefs (i.e., Hindus, Buddhists, Sikhs, Jains,  $n = 569$ ,  $M = 3.34$ ,  $SD = 0.68$ ), and lower (and generally below scale midpoint) among adherents to other religions or among non-religious individuals ( $n = 4,141$ ,  $M = 2.68$ ,  $SD = 0.76$ ),  $t(771.58) = 21.48$ ,  $p < .001$ ,  $d = 0.89$ , 95% CI = [0.80, 0.98]. Additional analyses tested for cultural differences. Participants who reported a South Asian, East Asian, or Southeast Asian cultural background had higher belief in Karma scores ( $n = 2,890$ ,  $M = 2.89$ ,  $SD = 0.75$ ) than did students from non-Asian cultural backgrounds ( $n = 2,003$ ,  $M = 2.60$ ,  $SD = 0.76$ ),  $t(4269) = 13.37$ ,  $p < .001$ ,  $d = 0.39$ , 95% CI = [0.33, 0.45].

**Correlations with justice beliefs and religious beliefs.** Belief in Karma was positively correlated with belief in a just world ( $r = .38$ , 99% CI = [.34, .43]).<sup>5</sup> This correlation was similar for participants who either did ( $r = .37$ ) or did not ( $r = .38$ ) adhere to a Karmic religious tradition. Belief in Karma was also positively correlated with belief in God ( $r = .24$ , 99% CI = [.20, .29]). This correlation was similar for participants who either did ( $r = .21$ ) or did not ( $r = .23$ ) adhere to a Karmic religious tradition.

In contrast, correlations between belief in Karma and religiosity varied substantially depending on participants' religious affiliation: This correlation was positive among Hindus ( $r = .40$ ,  $n = 63$ ), Buddhists ( $r = .42$ ,  $n = 178$ ) and Sikhs ( $r = .40$ ,  $n = 123$ ), but *negative* among Christians ( $r = -.18$ ,  $n = 866$ ).<sup>6</sup> The magnitudes of these correlations indicate that belief in Karma is conceptually related to, but also distinct from, belief in other supernatural forces. Also notable is the fact that the very nature of this relationship is markedly different, depending upon the specific religious traditions that individuals are exposed to.

We employed regression analyses to investigate the extent to which individuals' belief in Karma can be



**Figure 1.** Distribution of belief in Karma scores across religious groups (Studies 1 and 2). Note. Group sizes range from 25 (other affiliations in India) to 866 (Canadian student Christians). Groups with fewer than 25 participants are not displayed (see Supplemental Material for full details).

**Table 3.** Predictors of Belief in Karma, Canadian Students (Sample 1).

	Non-Karmic religious traditions			Karmic religious traditions		
	B [95% CI]	SE	p	B [95% CI]	SE	p
Intercept	2.62 [2.58, 2.67]	0.02	<.001	3.33 [3.00, 3.66]	0.17	<.001
Age	-0.02 [-0.04, 0.01]	0.02	.28	0.02 [-0.05, 0.09]	0.03	.61
Gender	-0.08 [-0.15, -0.02]	0.03	.017	-0.24 [-0.41, -0.08]	0.08	.004
Political conservatism	-0.05 [-0.08, -0.01]	0.02	.004	0.03 [-0.04, 0.10]	0.03	.35
Cultural group	0.08 [-0.02, 0.15]	0.03	.009	0.05 [-0.29, 0.39]	0.17	.77
Religiosity	<b>-0.18 [-0.23, -0.14]</b>	<b>0.02</b>	<b>&lt;.001</b>	<b>0.19 [0.11, 0.27]</b>	<b>0.04</b>	<b>&lt;.001</b>
Belief in God	<b>0.28 [0.23, 0.32]</b>	<b>0.02</b>	<b>&lt;.001</b>	0.02 [-0.06, 0.09]	0.04	.68
Belief in a just world	<b>0.27 [0.24, 0.30]</b>	<b>0.02</b>	<b>&lt;.001</b>	<b>0.23 [0.16, 0.30]</b>	<b>0.03</b>	<b>&lt;.001</b>
N	2,086			295		
R <sup>2</sup> / R <sup>2</sup> <sub>adj</sub>	.21 / .21			.26 / .24		
AIC	4,401.43			542.53		

Note. In all models, the following variables were dummy coded: Gender (0 = women, 1 = men), cultural group (0 = non-Asian, 1 = Asian); the remaining variables were standardized. Political orientation was coded with higher number indicating greater political conservatism. Bolded estimates are significant at  $p < .001$ . CI = confidence interval; AIC = Akaike information criterion.

predicted by the other variables assessed in this study. To test whether the pattern of relationships differed depending on exposure to Karmic doctrines, we conducted analyses separately for participants affiliated with Karmic religions and for those who were not affiliated with Karmic religions. Results (Table 3) indicated that among participants unaffiliated with Karmic religions, belief in Karma was uniquely predicted by participants’ cultural background, belief in a just world, belief in God, and (lower levels of) religiosity. Among participants affiliated with Karmic religions, belief in Karma was uniquely predicted by belief in a just world and (higher levels of) religiosity. Notably, in both analyses, the predictor variables collectively explained less than 25% of the variance in belief in Karma.

An additional regression analyses was conducted on the full dataset and included participant’s religious affiliation as a predictor variable, and also included the interactions between religious affiliation and each other predictor variables as additional predictor variables. This regression model explained 27% of the variance in belief in Karma (see Table S5 in the Supplemental Material), again indicating that the majority of individual-level variability in belief in Karma scores is left unexplained by these other variables. These findings appear to indicate that belief in Karma is a conceptually unique supernatural justice belief that is systematically related to, but not simply reducible to, a combination of belief in a just world, belief in supernatural forces, and exposure to specific theological traditions.

## Study 2: Canadian and Indian Adults

Study 1 included just a single measure of (non-Karmic) justice beliefs, and was also constrained to a sample of university students residing in Canada. To go beyond these methodological limitations, Study 2 included a variety of additional measures assessing belief in justice, and data were collected using survey methods designed to recruit more representative samples from both Canada and India (the cultural birthplace of Karma, within which most people are exposed to Karmic theological principles).

### Method

Prior to analyzing data from the Canadian and Indian samples, methodical details (e.g., materials, participant recruitment procedures, and data exclusion criteria) were preregistered on the Open Science Framework (OSF), along with hypotheses and analysis plans. Below we present results from preregistered analyses (e.g., bivariate correlations with belief in Karma) as well as additional regression analyses that were not preregistered. Full preregistration details can be found at <https://osf.io/tg8ce/>.

**Participants.** We recruited samples of adults from Canada and India through a market research company, Research Now. We were interested in recruiting a sample of participants that resembled the general Canadian and Indian populations; therefore, we recruited participants based on loose quotas for age and gender (and region in Canada, see Supplemental Material for details on the representativeness of this sample). Consistent with preregistered data exclusion criteria, participants were excluded for exceeding quota requirements and for failing attention checks placed within the survey (221 in Canada, 616 in India). New participants were recruited to replace anyone excluded through these criteria, until we reached the preplanned sample of 1,000 in each country. This sample size was selected as large enough to have high power ( $>.90$ ) to detect relatively small correlations (e.g.,  $r = .15$ ). The final sample consisted of 1,000 Canadian adults and 1,006 Indian adults.<sup>7</sup>

These samples were constrained by the requirement that participants have access to a computer (to complete the online survey) and by the language(s) in which the survey was available to participants. The Canadian sample was broadly representative of the Canadian population in terms of age, gender balance, geographic distribution, language, income, religiosity, and ethnicity; whereas, the Indian sample was less representative (e.g., Indian participants were somewhat older and more educated than the general population of India). But importantly, the Indian sample closely resembled the overall Indian population in terms of religious affiliation (i.e., 78% Hindu), thus providing a meaningful comparison to the Canadian sample (who were primarily Christian or nonreligious; see Table 1 and Supplemental Material for demographic details).

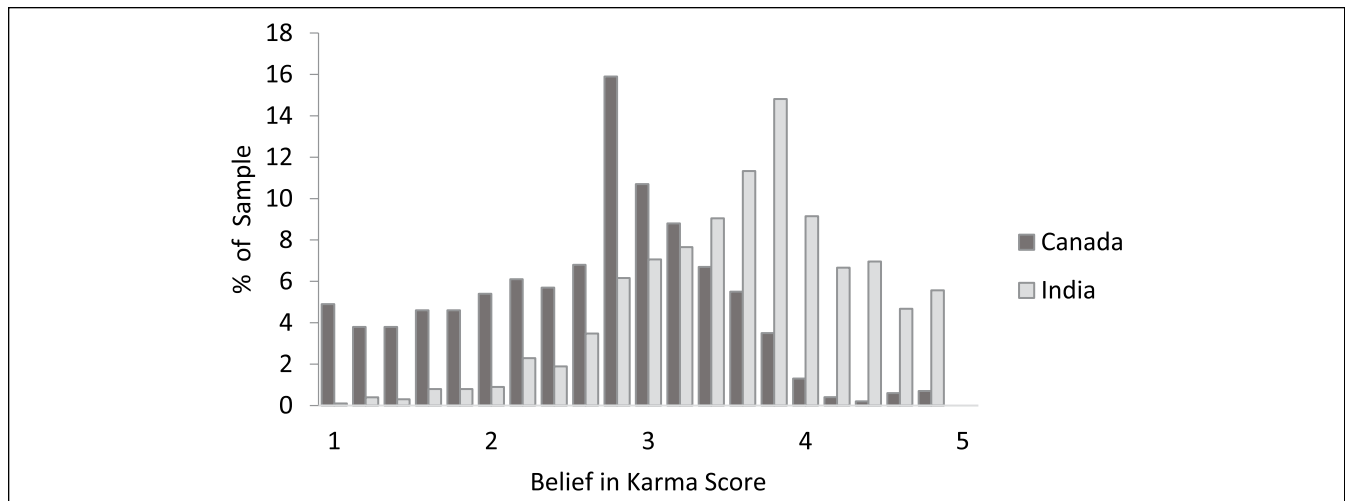
### Materials

**Belief in Karma.** Participants completed the 16-item belief in Karma questionnaire.

**Justice beliefs.** Participants completed three measures assessing individual differences in belief in (non-Karmic) justice. They completed Lipkus, Dalbert, and Siegler's (1996) eight-item measure of *belief in a just world* for the self (believe in a just world; for example, "I feel that I get what I deserve";  $\alpha_s = .87$  and  $.89$  in Canada and India, respectively). A second measure, assessing belief in *procedural justice*, included two items from Lucas et al. (2007): "Regardless of the outcomes they receive, people are generally subjected to fair procedures" and "I feel that people generally use methods that are fair in their evaluations of others" ( $\alpha_s = .77$  and  $.73$ ). A third measure, assessing expectations regarding *legal justice*, was computed from responses to two additional items: "I have confidence in my local police department" and "The legal system (e.g., courts) is usually successful in getting justice" ( $\alpha_s = .70$  and  $.80$ ).<sup>8</sup>

**Expectations about interpersonal punishments and rewards.** Participants responded to eight vignette-based items that were created to assess participants' expectations regarding specific outcomes that people might experience as a result of specific antisocial and prosocial actions. Four items asked participants to imagine that someone they knew did something wrong (e.g., "harms another person") and to report the likelihood of consequent interpersonal punishment (e.g., "other people will make sure that they pay"). Four analogous items asked participants to imagine that someone they knew did something good (e.g., "helps another person") and to report the likelihood of consequent interpersonal reward (e.g., "Other people will make sure that they are repaid"). (Responses were made on 5-point scales, ranging from *very unlikely* to *very likely*.) Two items—intended to be reverse-scored—produced composite indices of relatively low reliability ( $\alpha_s < .66$ ), and so were omitted of analyses. Analyses were performed on two three-item composite indices representing expectations of *interpersonal punishment* ( $\alpha_s = .84$  and  $.80$ ) and *interpersonal reward* ( $\alpha_s = .86$  and  $.83$ ).

**Religious beliefs.** Participants provided information about their religious background, including their religious affiliation, frequency of religious attendance, and level of religiosity and spirituality (1 = *not at all religious/spiritual* to 5 = *very religious/spiritual*). Based on responses to the latter two items, we computed a difference score (spirituality minus religiosity) as a measure of the extent to which participants were spiritual-but-not-religious. Participants also reported their belief in the existence of God, the afterlife, free will, whether they believed that god is "responsible for enacting karma" (1 = *Karma operates independently of God*; 5 = *Karma occurs because of God's will*), and if god can "intervene to over-rule karmic consequences" (1 = *God never*



**Figure 2.** Distribution of belief in Karma, among Indian and Canadian adults.

*contradicts Karma*; 5 = *God often intervenes and overrules Karma*).

**Other variables.** Participants provided demographic information, including age, gender, education, income, and ethnicity. They also reported their political orientation (1 = *politically liberal* to 7 = *politically conservative*). Participants also reported whether they “feel your life has meaning,” and rated their life satisfaction (computed as mean of two items: “I am satisfied with my life” and “In general, my life is close to my ideal”;  $\alpha$ s = .85 and .74).

## Results and Discussion

**Psychometric analyses of the Belief in Karma Questionnaire.** The 16 items on the belief in Karma questionnaire had high internal consistency ( $\alpha$ s = .93 and .90 in Canada and India, respectively). Replicating results from Study 1, exploratory factor analyses indicated that the items loaded onto a single factor (Table 2).<sup>9</sup> Confirmatory factor analyses also replicated Study 1, showing that a four-factor model—based on conceptually distinct dimensions of Karma—provided a good fit to the data,  $\chi^2(93) = 973.53, p < .001, CFI = .96, RMSEA = .07$ . Measurement invariance analyses (see Supplemental Material for details) revealed that adding additional constraints to this model had only a minor impact on model fit, indicating that the questionnaire possessed strict measurement invariance, allowing for comparisons of mean scores across populations.

Figure 2 displays the distribution of belief in Karma scores among Indian and Canadian adults. As expected, belief in Karma was higher among Indians—a population that is more regularly exposed to Karmic religious traditions,  $d = 1.27, 95\% CI = [1.17, 1.37], t(2004) = 28.33, p < .001$ . (Over 83% of Indians had belief in Karma scores that were above

scale midpoint; 62% of Canadians had scores that were at or below scale midpoint.) Figure 2 also reveals substantial within-country variability in belief in Karma. Replicating Study 1, within both Canada and India, belief in Karma scores were highest among Hindus, Buddhists, and Sikhs, and lowest among atheists (see Figure 1). It is worth noting that belief in Karma was higher among Christians and Muslims in India compared with Canada, indicating that participants’ broader cultural environment—and not just their specific religious affiliation—is also implicated in their belief in Karma.

**Relations with justice beliefs and religious beliefs.** Table 4 summarizes zero-order correlations between belief in Karma and various measures of justice beliefs. Belief in Karma was generally positively associated with justice beliefs, but these associations were modest in size, indicating that Karma is conceptually distinct from other, more secular, justice beliefs. In addition to considering justice beliefs a predictor of belief in Karma, expectations of interpersonal punishments and rewards can also be considered as an outcome variable. Exploratory regression analyses were conducted predicting the expectation of interpersonal punishments and rewards (six-item composite) from belief in Karma, while controlling for belief in God and just world. Results showed that belief in Karma uniquely predicted a greater expectation of interpersonal justice in both Canada ( $\beta = .18, 95\% CI = [0.12, 0.24], p < .001$ ) and India ( $\beta = .16, 95\% CI = [0.10, 0.23], p < .001$ ), suggesting that belief in Karma may have implications for social expectations beyond what is explained by preexisting measures of justice beliefs.

Table 4 also summarizes zero-order correlations between belief in Karma and various measures of religious beliefs. Results show that belief in Karma was generally positively associated with religious beliefs (e.g., religiosity, spirituality, belief in God), and that these correlations were generally



**Table 4.** Predictors of Belief in Karma, Canadian and Indian Adults.

	Canada				India			
	<i>r</i> [99% CI]	<i>B</i> [95% CI]	SE	<i>p</i>	<i>r</i> [99% CI]	<i>B</i> [95% CI]	SE	<i>p</i>
Intercept		2.69 [2.62, 2.76]	0.03	<.001		3.20 [3.10, 3.30]	0.05	<.001
Religiosity	<b>.17 [.09, .25]</b>	-0.08 [-0.17, 0.00]	0.04	.063	<b>.38 [.31, .45]</b>	0.06 [0.01, 0.11]	0.03	.021
Spirituality	<b>.31 [.23, .38]</b>	<b>0.20 [0.14, 0.26]</b>	<b>0.03</b>	<.001	<b>.44 [.37, .51]</b>	<b>0.14 [0.09, 0.18]</b>	<b>0.02</b>	<.001
Religious attendance	-.01 [-.09, .07]	<b>-0.21 [-0.27, -0.14]</b>	<b>0.03</b>	<.001	<b>.23 [.15, .31]</b>	-0.04 [-0.13, 0.04]	0.04	.28
Belief in God	<b>.30 [.22, .37]</b>	<b>0.29 [0.21, 0.37]</b>	<b>0.04</b>	<.001	<b>.42 [.34, .48]</b>	<b>0.15 [0.11, 0.20]</b>	<b>0.02</b>	<.001
Religious affiliation	<b>.14 [.06, .22]</b>	<b>0.65 [0.41, 0.90]</b>	<b>0.12</b>	<.001	<b>.33 [.25, .40]</b>	<b>0.60 [0.50, 0.70]</b>	<b>0.05</b>	<.001
Belief in a just world	<b>.17 [.09, .25]</b>	0.07 [0.01, 0.12]	0.03	.021	<b>.38 [.31, .45]</b>	<b>0.14 [0.10, 0.19]</b>	<b>0.02</b>	<.001
Procedural justice	<b>.16 [.08, .24]</b>	<b>0.11 [0.05, 0.17]</b>	<b>0.03</b>	<.001	<b>.30 [.22, .37]</b>	0.06 [0.02, 0.11]	0.02	.008
Legal justice	-.04 [-.12, .05]	<b>-0.13 [-0.18, -0.08]</b>	<b>0.03</b>	<.001	<b>.22 [.14, .30]</b>	-0.01 [-0.05, 0.04]	0.02	.80
Interpersonal punishment	<b>.17 [.09, .24]</b>	0.06 [0.01, 0.11]	0.03	.011	<b>.22 [.14, .30]</b>	0.04 [-0.00, 0.08]	0.02	.063
Interpersonal rewards	<b>.23 [.15, .30]</b>	<b>0.11 [0.06, 0.16]</b>	<b>0.03</b>	<.001	<b>.26 [.17, .34]</b>	0.03 [-0.02, 0.07]	0.02	.26
Religious attendance × Religion		0.43 [0.15, 0.71]	0.14	.002		0.06 [-0.03, 0.15]	0.04	.17
<i>N</i>		884				880		
<i>R</i> <sup>2</sup> / <i>R</i> <sub>adj</sub> <sup>2</sup>		.29 / .28				.44 / .43		
AIC		1,895.78				1,477.93		

Note. Models also control for age, gender, education, and political conservatism (see Supplemental Material for full details). Bolded estimates are significant at  $p < .001$ . CI = confidence interval; AIC = Akaike information criterion.

stronger in India than in Canada. Additional results revealed that, even among participants who viewed Karma and God as independent forces (48% of Canadians and 20% of Indians), belief in Karma was positively correlated with belief in God, and this relationship was especially strong in India (Canada:  $r = .14$ , 99% CI = [.05, .23],  $p = .002$ ; India:  $r = .50$ , 99% CI = [.39, .60],  $p < .001$ ). Belief in Karma was also positively correlated with belief in the existence of an afterlife (Canada:  $r = .38$ , 99% CI = [.31, .45], India:  $r = .54$ , 99% CI = [.48, .60])—an association that persisted even when an alternative measure of belief in Karma was computed after omitting the items that mention reincarnation (Canada:  $r = .30$ , 99% CI = [.23, .37], India:  $r = .41$ , 99% CI = [.34, .48]). In contrast, belief in Karma was more weakly associated with belief in the existence of free will (Canada:  $r = -.07$ , 99% CI = [-.15, .01], India:  $r = .21$ , 99% CI = [.13, .29]). Additional analyses focused on specific religious subgroups and revealed that Indian Hindus ( $n = 755$ ) who were more religious or who attended more religious services were more likely to believe in Karma ( $r_s = .42$  and  $.29$ ,  $p_s < .001$ ), whereas Canadian Christians ( $n = 579$ ) who were more religious or who attended more religious services were *less* likely to believe in Karma ( $r = -.08$ ,  $p = .044$  and  $r = -.22$ ,  $p < .001$ ). Also, in Canada belief in Karma was higher among participants who described themselves as spiritual-but-not-religious,  $r = .16$ , 99% CI = [.08, .23], implying that Canadians do perceive Karma to be intertwined with spirituality, even though belief in Karma is not promoted by the dominant religious tradition in Canada.

We employed regression analyses to investigate the extent to which belief in Karma can be predicted by the various other variables assessing justice beliefs and religious beliefs.

We conducted analyses separately on data from the Canadian and Indian samples. All variables identified in Table 4 were entered into a multiple regression model predicting belief in Karma. Results (reported in Table 4) are generally consistent with the bivariate correlations summarized above, although two additional results of note emerged. Within Canada (but not India), the frequency with which participants attended religious ceremonies was negatively associated with belief in Karma. Also within Canada (but not India), the expectation of legal justice was negatively associated with belief in Karma—suggesting a compensatory relationship between Karmic justice and legal justice (analogous to a previously documented perception of compensatory relationship between God and government; Kay, Gaucher, Napier, Callan, & Laurin, 2008).

In addition, the results of these regression analyses revealed that the full set of predictor variables (including demographic variables, multiple measures of justice beliefs, and multiple measures of religious beliefs) explained 28% of the variance in Canadians' belief in Karma and 43% of the variance in Indians' belief in Karma. An additional regression analyses was conducted on the full dataset and included participant's country of origin (Canada, India) as a predictor variable, and also included the interactions between country and each other predictor variables as additional predictor variables. This regression model explained 53% of the variance in belief in Karma (see Supplemental Material)—revealing that although an arithmetic combination of these variables had substantial predictive power, there remains considerable individual-level variability in belief in Karma within each country, unexplained by these other variables. Thus, like the results of Study 1, these results indicate that

belief in Karma is a conceptually unique psychological construct that is not simply reducible to a combination of justice beliefs, supernatural beliefs, and exposure to specific cultural traditions.<sup>10</sup>

**Correlations with other variables.** Aside from its expected correlations with cultural background and religious affiliation, belief in Karma was generally not associated with other demographic variables, including age, gender, and level of education. Nor was it associated with political liberalism/conservatism. Within the Indian sample, belief in Karma was positively correlated with life satisfaction ( $r = .23$ , 99% CI = [.16, .31]) and meaning in life ( $r = .32$ , 99% CI = [.24, .39]); no such relations emerged in the Canadian sample ( $r = -.01$ , 99% CI = [-.09, .07] and  $r = .07$ , 99% CI = [-.01, .15], respectively). These results suggest that among Indians, but not Canadians, Karma may be part of the cultural framework through which individuals derive a sense of meaning and satisfaction (Oishi & Diener, 2014).

### Study 3: Karma in This Life and Across Reincarnations

Study 3 addressed two limitations of Studies 1 and 2. First, although the results of Studies 1 and 2 revealed that belief in Karmic justice was related to (but distinct from) other justice beliefs as well as other supernatural beliefs, the magnitude of those relations might have been inflated by the format of the belief in Karma questionnaire, which intermixed items pertaining to reincarnation with items that focused more strictly on justice. Therefore, in Study 3 we employed a different presentational format, in which the subset of items referring to outcomes experienced across reincarnations were presented separately from items referring to outcomes experienced within an individual's own lifetime.

Second, neither Study 1 nor Study 2 was designed to test whether belief in Karma uniquely predicts relevant social judgments. Therefore, Study 3 included a measure that described misfortunes experienced by specific individuals, and asked participants to judge the extent to which those misfortunes could be causally attributed to those individuals' previous—and seemingly unrelated—prosocial or antisocial behaviors. Analyses tested the extent to which those judgments were predicted by belief in Karma, after statistically controlling for religious belief and for belief in a just world.

Prior to collecting data, methodical details and hypotheses were preregistered on the OSF, and are available at <https://osf.io/jbfxg/>

### Method

**Participants.** Participants were recruited from Amazon Mechanical Turk workers located in the United States ( $n = 416$ ) and India ( $n = 309$ ).<sup>11</sup> These sample sizes are large enough to detect relatively small correlations (e.g.,  $r = .20$ ) between variables with 80% power. As in Study 2, Indian participants were required to understand English and

have access to a computer, and so are not representative of the broader Indian population. Nonetheless, the Indian sample was predominantly (75%) Hindu, providing a useful comparison to the United States sample, which was primarily Christian (53%) or nonreligious (39%, see Table 1).

**Materials.** Participants completed an online survey containing several questionnaires<sup>12</sup> presented in a quasi-randomized order.

**Belief in Karma.** Participants were randomly assigned to one of two conditions. In one condition, participants completed the full 16-item belief in Karma questionnaire ( $\alpha = .92$  in both countries). In the other condition, participants were presented with two different subsets of these items, at different points in the survey. One subset comprised four items (Items 1, 10, 11, and 15 in Table 2) that collectively included references to Karmic reincarnation and thus explicitly reflected belief in the supernatural dimension of Karma (*Karmic Reincarnation*;  $\alpha = .90$  and  $.82$  in United States and India, respectively). The other subset comprised five items (Items 4-8 in Table 2) that omitted any mention of reincarnation or Karma, and instead simply measured expectations regarding valence-congruent outcomes of moral actions within an individual's lifetime (*Karmic Justice*,  $\alpha = .88$  in both United States and India; see Supplemental Material for further psychometric analyses). By presenting Karmic Reincarnation and Karmic Justice items in separate question blocks and at different points in the survey, we attempted to minimize the potential for one set of items to influence participants' interpretation of, and response to, the other set of items.

**Causal judgments about individuals' misfortunes.** Participants read two vignettes in which undesirable outcomes befell individuals. In one vignette, the individual has previously engaged in prosocial behavior; in the other vignette the individual had previously engaged in antisocial behavior. In neither vignette was there any obvious causal connection between the prior behavior and the later misfortune, nor was the later misfortune the apparent result of any interpersonal interaction (e.g., in one vignette, the target individual lost his wallet). After reading each vignette, participants rated the extent to which the misfortune was a causal consequence of the individual's previous behavior.

**Belief in a just world.** Participants completed Lipkus et al.'s (1996) eight-item measure of belief in a just world for the self ( $\alpha = .86$  in both United States and India).

**Religious and supernatural beliefs.** Participants completed a three-item measure assessing belief in God ( $\alpha = .91$  and  $.67$  in United States and India, respectively) and an eight-item measure assessing belief in witchcraft ( $\alpha = .91$  and  $.84$ ). In addition, participants reported their level of religious orthodoxy and orthopraxy, which were very highly correlated ( $r$ s

**Table 5.** Mean Scores for Each Karma Measure, Among Americans and Indians in Study 3.

	United States M [95% CI]	India M [95% CI]	<i>d</i> [95% CI]	<i>t</i>	<i>p</i>
Karma 16-item	2.74 [2.61, 2.86]	3.59 [3.47, 3.70]	1.03 [0.81, 1.26]	9.95	<.001
Reincarnation	2.72 [2.58, 2.87]	3.65 [3.50, 3.79]	0.91 [0.70, 1.13]	8.84	<.001
Justice	3.00 [2.85, 3.14]	3.79 [3.65, 3.93]	0.82 [0.60, 1.04]	7.86	<.001

Note. We had also preregistered comparing adherents to Karmic religions to adherents to non-Karmic religions, but sample sizes in these subgroups within each country were not large enough to conduct any meaningful analyses. CI = confidence interval.

= .90 and .91 in United States and India, respectively) and thus combined into a two-item measure of religiosity. Additional items assessed how “spiritual” participants were, and how frequently they attended religious services. Four additional items (adapted from Lanman & Buhrmester, 2017) assessed exposure to Karmic beliefs from various social sources (e.g., religious services, family members); responses were combined into a single four-item index ( $\alpha$ s = .80 and .81 in United States and India, respectively).

**Other variables.** As in previous studies, participants provided demographic information and reported their political orientation. Participants also completed a 10-item measure of faith in intuition (Pacini & Epstein, 1999;  $\alpha$ s = .91 and .73 in United States and India, respectively).

## Results and Discussion

Table 5 summarizes mean scores on the 16-item belief in Karma measure, as well as the two separate measures (Karmic Reincarnation, Karmic Justice) comprised distinct subsets of items completed independently. Scores on each measure were higher in India than in the United States; Karmic Justice scores were higher than Karmic Reincarnation scores in both samples. Despite being presented separately, beliefs in Karmic Justice and Karmic Reincarnation items were highly correlated, among both American and Indian participants ( $r$ s = .75 and .79, respectively). Therefore, the high internal consistency of the belief in Karma questionnaire is not a methodological artifact—at a psychological level of analysis these conceptually distinct beliefs appear to be integrated in a single coherent construct representing belief in Karma.

**Relations with justice and religious beliefs.** Table 6 summarizes correlations between the three different Karma measures (Belief in Karma, Karmic Reincarnation, Karmic Justice) and other individual differences measures. Results reveal generally positive correlations with belief in a just world. It is notable that in the Indian (but not American) sample belief in a just world was significantly positively correlated even with the more narrowly defined measure of Karmic Reincarnation. Results also reveal generally positive correlations with religious and/or spiritual beliefs of various kinds (belief in God

and witchcraft, spirituality and religiosity, although *not* with frequency of attendance at religious services). These correlations were found even with the more narrowly defined measure of Karmic Justice (which deliberately omitted items that mentioned reincarnation or supernatural forces of any kind). This result—along with the finding that belief in a just world was more modestly associated with other supernatural beliefs (e.g., the correlation between belief in a just world and witchcraft was .21 in United States and  $-.00$  in India)—suggests that Karmic justice is *not* psychologically equivalent to secular mechanisms of justice or fairness, but instead reflects underlying inclinations to hold various supernatural beliefs.

In both the United States and India, all three Karma measures were strongly predicted by social exposure to Karmic beliefs, indicating the importance of social learning mechanisms to the development of belief. Finally, in both countries all three Karma measures correlated positively with faith in intuition, consistent with the hypothesis that Karma, like God, reflects the intuitive appeal of supernatural forces (Pennycook, Ross, Koehler, & Fugelsang, 2016). Results were fairly consistent across all three measures and all formed reliable scales, implying that future researchers could use one of the abbreviated measures to specifically assess theologically correct and culturally specific definitions of Karma as moralized reincarnation, or Karmic justice beliefs in the absence of these religious overtones.

**Karma and causal judgments.** To address whether belief in Karma unique predicts social judgments, we conducted regression analyses on the causal judgment items. For each causal judgment item, three predictor variables were entered: Belief in a just world, belief in God, and belief in Karma. Separate analyses were conducted on the United States and Indian samples. Results are summarized in Tables 7 and 8. These results revealed that, in both United States and India, belief in Karma predicted the extent to which participants attributed an antisocial individual’s misfortune to their past behavior, even while controlling for belief in God and belief in a just world. Additional analyses that substituted measures of Karmic Reincarnation or Karmic Justice in place of the full 16-item measure showed comparable results (Table 7). There was no compelling evidence that belief in Karma predicted the extent to which participants attributed misfortune to a previously prosocial individuals’ past behavior (Table 8).

**Table 6.** Correlations (95% CI) With Three Different Measures of Belief in Karma, Study 3.

	United States			India		
	16 items	Reincarnation	Justice	16 items	Reincarnation	Justice
Justice		<b>.75 [0.66, 0.81]</b>			<b>.79 [0.69, 0.87]</b>	
Belief in God	<b>.31 [0.19, 0.43]</b>	<b>.35 [0.21, 0.47]</b>	<b>.33 [0.18, 0.45]</b>	<b>.28 [0.07, 0.47]</b>	<b>.33 [0.12, 0.52]</b>	<b>.39 [0.18, 0.56]</b>
Belief in a just world	<b>.27 [0.12, 0.41]</b>	.09 [-0.07, 0.25]	.18 [0.01, 0.34]	<b>.40 [0.2, 0.57]</b>	.25 [0.08, 0.42]	<b>.32 [0.16, 0.5]</b>
Religiosity	.17 [0.02, 0.32]	<b>.23 [0.07, 0.37]</b>	<b>.25 [0.09, 0.38]</b>	<b>.31 [0.11, 0.49]</b>	<b>.46 [0.27, 0.62]</b>	<b>.44 [0.26, 0.6]</b>
Religious attendance	-.03 [-0.17, 0.12]	.08 [-0.08, 0.23]	.05 [-0.11, 0.18]	.06 [-0.14, 0.24]	.04 [-0.19, 0.25]	.10 [-0.12, 0.32]
Spirituality	<b>.35 [0.20, 0.48]</b>	<b>.30 [0.16, 0.43]</b>	<b>.28 [0.12, 0.41]</b>	<b>.44 [0.27, 0.6]</b>	<b>.38 [0.21, 0.54]</b>	<b>.38 [0.21, 0.54]</b>
Social exposure to Karma	<b>.48 [0.35, 0.59]</b>	<b>.52 [0.41, 0.62]</b>	<b>.46 [0.33, 0.57]</b>	<b>.47 [0.3, 0.61]</b>	<b>.53 [0.38, 0.64]</b>	<b>.46 [0.28, 0.61]</b>
Witchcraft	<b>.56 [0.44, 0.66]</b>	<b>.55 [0.45, 0.66]</b>	<b>.57 [0.47, 0.67]</b>	<b>.63 [0.47, 0.74]</b>	<b>.47 [0.26, 0.64]</b>	<b>.38 [0.16, 0.57]</b>
Faith in intuition	<b>.34 [0.17, 0.47]</b>	<b>.29 [0.16, 0.42]</b>	<b>.28 [0.14, 0.41]</b>	<b>.38 [0.20, 0.54]</b>	<b>.25 [-0.01, 0.49]</b>	<b>.39 [0.12, 0.62]</b>
N	206		211		153	155

Note. Bolded coefficients are significant at  $p < .001$ . As in Studies 1 and 2, although belief in Karma was positively correlated with religiosity in the entire United States sample, in the subsample of American who identified as Christian, belief in Karma and religiosity were slightly negatively associated (16-item  $r = -.16$ ,  $p = .092$ ) or unassociated (Reincarnation  $r = -.02$ ,  $p = .83$ ; Justice  $r = -.04$ ,  $p = .70$ ). Other subsamples of religious groups were too small to conduct meaningful analyses. CI = confidence interval.

These results suggest that belief in Karma does indeed uniquely predict judgments about the causal linkages between actions and outcomes—as long as those actions and outcomes are valence-congruent and thus fit the prototypical template of Karmic causality.

## General Discussion

Taken together, these results demonstrate that our questionnaire provides a reliable and valid way to measure belief in Karma, an individual difference that is distinct from three theoretically and empirically related constructs: belief in secular justice, belief in God, and participation in religious/cultural traditions that include Karmic theology. Belief in Karma also uniquely predicts causal judgments when misfortune follows antisocial behavior, suggesting the value of directly measuring belief in Karma in studies of social cognition, justice, and religious beliefs across diverse cultural contexts.

### Belief in Karma, God, and a Just World

Karma shares with secular justice beliefs the expectation that people will eventually get what they deserve, but theoretically goes beyond interpersonal fairness in the expectation that consequences for one's actions may manifest in future unrelated experiences or a future reincarnation. Our results are consistent with the hypothesis that intuitions of interpersonal fairness may encourage the transmission of cultural information about moralizing supernatural forces (Baumard & Boyer, 2013). Belief in Karma was positively associated with various measures of interpersonal justice in Canada, the United States, and India, implying that experiences of interpersonal fairness may make ideas about Karma more or less

compelling, even in cultural contexts where Karmic beliefs are uncommon.

Karma is also similar to the moralizing gods of many religious traditions, who reward and punish people for their behavior, and similar cognitive (Willard & Norenzayan, 2013), motivational (Laurin & Kay, 2017), and evolutionary processes (Norenzayan et al., 2016) may encourage belief in both God and Karma. Consistent with this view, belief in Karma and God were positively correlated and both were lowest among atheists, perhaps reflecting a more general individual difference in perceptions of supernatural agency. This hypothesis raises many fascinating possibilities for future research. For example, belief in Karma may be predicted by the same individual differences that have been found (in some samples) to predict belief in God (e.g., mentalizing, dualism, and intuitive thinking, Pennycook et al., 2016; Willard & Norenzayan, 2013). Thinking about Karma and thinking about God may also have similar consequences, such as increased prosocial behavior among believers, and if so, these effects may depend on the explicit belief that Karma is real and involved in participants' lives (Shariff, Willard, Andersen, & Norenzayan, 2016; C. J. M. White, Kelly, Shariff, & Norenzayan, 2018). Answering these questions requires measuring individual differences in belief in Karma (not just participants' religious affiliation or other justice beliefs) and our questionnaire provides a useful tool for doing so.

Belief in Karma also predicted increased perceptions of causality in specific situations where bad experiences follow bad behavior. Karma remained a strong predictor when controlling for preexisting measures of belief in a just world and belief in God, demonstrating the utility of directly measuring belief in Karma when studying judgments of moral behavior and good/bad fortune. Future research can explore whether belief in Karma predicts other social judgments, such as the

**Table 7.** Predictors of Causality Judgments When Bad Experiences Follow Antisocial Actions.

	United States						India					
	16 items		Reincarnation		Justice		16 items		Reincarnation		Justice	
	B [95% CI]	p	B [95% CI]	p	B [95% CI]	p	B [95% CI]	p	B [95% CI]	p	B [95% CI]	p
Intercept	2.53 [2.31, 2.74]	<.001	2.43 [2.20, 2.66]	<.001	2.44 [2.21, 2.66]	<.001	3.48 [3.16, 3.79]	<.001	3.36 [3.04, 3.68]	<.001	3.34 [3.00, 3.67]	<.001
Karma	<b>1.12 [0.88, 1.35]</b>	<.001	<b>0.77 [0.52, 1.02]</b>	<.001	<b>0.82 [0.57, 1.06]</b>	<.001	0.40 [0.05, 0.75]	.024	<b>0.76 [0.41, 1.11]</b>	<.001	<b>0.67 [0.30, 1.05]</b>	<.001
Belief in a just world	0.04 [-0.19, 0.26]	.74	0.12 [-0.12, 0.35]	.33	0.03 [-0.20, 0.26]	.80	0.32 [-0.03, 0.66]	.070	0.25 [-0.09, 0.59]	.15	0.19 [-0.17, 0.55]	.29
God	-0.02 [-0.25, 0.21]	.86	0.07 [-0.18, 0.31]	.60	0.07 [-0.18, 0.31]	.59	-0.31 [-0.64, 0.02]	.066	-0.34 [-0.69, 0.01]	.055	-0.32 [-0.68, 0.04]	.083
N	204		209		209		140		137		133	
R <sup>2</sup> / R <sup>2</sup> <sub>adj</sub>	.34 / .33		.19 / .18		.21 / .20		.09 / .07		.15 / .13		.11 / .09	
AIC	766.43		817.07		812.32		581.17		570.63		560.86	

Note. Bolded estimates are significant at  $p < .001$ . CI = confidence interval; AIC = Akaike information criterion.

**Table 8.** Predictors of Causality Judgments When Bad Experiences Follow Prosocial Actions.

	United States						India					
	16 items		Reincarnation		Justice		16 items		Reincarnation		Justice	
	B [95% CI]	p	B [95% CI]	p	B [95% CI]	p	B [95% CI]	p	B [95% CI]	p	B [95% CI]	p
Intercept	1.65 [1.48, 1.82]	<.001	1.49 [1.33, 1.65]	<.001	1.49 [1.33, 1.65]	<.001	2.75 [2.44, 3.06]	<.001	2.25 [1.95, 2.54]	<.001	2.20 [1.91, 2.50]	<.001
Karma	<b>0.38 [0.19, 0.57]</b>	<.001	0.13 [-0.04, 0.30]	.12	0.08 [-0.09, 0.25]	.36	0.13 [-0.21, 0.47]	.46	0.32 [0.01, 0.64]	.046	0.28 [-0.05, 0.61]	.092
Belief in a just world	-0.13 [-0.31, 0.05]	.16	-0.03 [-0.19, 0.13]	.68	-0.04 [-0.20, 0.12]	.65	-0.06 [-0.41, 0.28]	.71	0.25 [-0.06, 0.56]	.12	0.18 [-0.14, 0.49]	.27
God	-0.04 [-0.22, 0.14]	.65	0.02 [-0.15, 0.18]	.84	0.04 [-0.13, 0.20]	.66	<b>-0.58 [-0.90, -0.25]</b>	<.001	-0.31 [-0.63, 0.00]	.052	-0.28 [-0.60, 0.04]	.085
N	203		209		209		141		137		133	
R <sup>2</sup> / R <sup>2</sup> <sub>adj</sub>	.08 / .06		.01 / .00		.01 / -.01		.09 / .07		.06 / .04		.05 / .02	
AIC	669.48		656.74		658.31		583.23		545.71		526.69	

Note. Bolded estimates are significant at  $p < .001$ . CI = confidence interval; AIC = Akaike information criterion.

likelihood of revenge or third-party punishment following moral transgressions, the reverse inference that people who experience misfortune have more negative character traits, and whether these expectations are similar for prosocial and antisocial behavior.

### **Cultural Learning and Belief**

Our results also clearly demonstrate that cultural learning plays an important role in shaping which specific justice beliefs people hold: Belief in Karma was higher among more religiously devoted Hindus, Buddhists, and Sikhs, but lower among more religiously devoted Christians, and higher among Hindus, Sikhs, Christians, and Muslims living in India than in Canada, indicating how cultural factors can encourage or discourage belief in specific supernatural forces. Cultural factors predicted greater endorsement of Karma-like causality even in items that do not explicitly mention “Karma,” reincarnation, or any other cues to a theologically specific definition of Karma. This provides evidence that Karma reflects a specific belief about justice and causality, which is predicted by individual differences and cultural learning, but goes beyond simple agreement with a particular religious doctrine.

Although the concern for fairness and deserved outcomes is shared by many different populations and many different supernatural beliefs, the specific form that this belief takes varies widely across cultures. Future research investigating belief in a just world could benefit from considering how an individual’s explicit, culturally structured ideas about justice could influence how people react to specific instances of injustice. For example, illness, natural disasters, social hierarchy, and the suffering of innocents may threaten belief in a just world, leading to compensatory behavior (Hafer & Rubel, 2015; Lerner, 1980), but these experiences may seem more deserved and acceptable when attributed to Karmic retribution for misdeeds in a past life (Cotterill, Sidanius, Bhardwaj, & Kumar, 2014).

### **Constraints on Generality**

Belief in Karma was not reducible to participants’ religious affiliation or secular justice beliefs, and the Karma questionnaire provided a meaningful index of individual differences in belief in India, Canada, and the United States, but future research in other populations is necessary. Belief in Karma was positively associated with religious exposure, devotion, and beliefs when participants’ religious context included Karma (e.g., among Indian Hindus), but not when it directly contradicted Karmic principles (e.g., among Canadian Christians). This pattern may generalize to other populations where Karma is central to or in conflict with prevalent religious teachings (e.g., Buddhists vs. Muslims), but may not adequately explain

variation in belief among people whose religious devotion is focused on a loving relationship with a particular god (Fuller, 2004) or ritual practice independently of supernatural beliefs (e.g., White practitioners at North American meditations centers, Cadge, 2005). In addition, Karma was predicted by participant’s experience of secular justice, and it would be valuable to investigate belief in Karma among participants from more diverse sociodemographic backgrounds, in addition to the highly educated, computer-using populations studied here. For example, Karma may be more accepted by privileged, high-caste Indians (because Karma justifies their place in society, Cotterill et al., 2014), while low-caste Hindus may be more skeptical of Karma (Jogdand, Khan, & Mishra, 2016), or there may be a compensatory relationship between belief in secular justice and belief in supernatural justice (Kay et al., 2008). Research across more diverse cultural contexts would be valuable to address how cultural learning interacts with personal experiences to shape the specific justice beliefs that individuals hold, and whether these beliefs have similar implications for social judgment in different cultural contexts.

### **Conclusion**

Further research is needed to investigate how an individual’s history of cultural learning, personal experiences of interpersonal fairness, and their cognitive and motivational tendencies shape beliefs about supernatural justice. The Karma questionnaire described here provides one tool that may be useful in such an endeavor. Karma is a novel topic of study that is vital for understanding religious traditions based on Karmic principles (a large portion of human beings on the planet) and for understanding the diverse ways that individuals think about the supernatural entities that enforce justice and shape the course of life events.

### **Authors’ Note**

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### **Declaration of Conflicting Interests**

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## Notes

1. Kopalle, Lehmann, and Farley (2010) previously used a four-item measure of belief in Karma, but did not perform in-depth psychometric analyses, assess its validity across diverse cultural contexts, or test its association with measures of justice, religiosity, or supernatural belief. Our studies provide the first step in answering these questions.
2. Complete information on sample size planning, data exclusions, and measures are reported in this article and/or in the accompanying Supplemental Material. (Measures completed by participants but not reported here are described in the Supplemental Material.) All data relevant to these analyses are publicly available at <https://osf.io/huy75/>.
3. We assessed overlap between these two samples by matching participants based on their e-mail addresses ( $n = 454$  in both samples;  $M$  age = 20.59,  $SD = 2.77$ ; 84.0% female; 52.6% Asian, 30.4% European; 28.9% Christian, 56.7% nonreligious). Several students declined to provide an e-mail address, preventing us from definitively establishing the amount of participant overlap.
4. The two reverse-scored questions consistently had the lowest factor loadings, suggesting methods bias rather than a meaningful secondary factor. We retained these items to help make clear to participants that, in its usage on this questionnaire, “Karma” was not simply metaphorical.
5. There was no evidence that the size of this correlation was meaningfully depressed by the inclusion of reincarnation items in the belief in Karma questionnaire: We computed an abbreviated belief in Karma score based on just the eight items that omitted any mention of reincarnation or past/future lives, and this alternative measure correlated similarly with belief in a just world,  $r(3159) = .42$ , 99% confidence interval (CI) = [0.38, 0.45].
6. It is also notable that participants who described themselves as neither spiritual nor religious reported lower belief in Karma ( $M = 2.53$ , 95% CI = [2.49, 2.58]) than participants who described themselves as either religious ( $M = 2.71$ , 95% CI = [2.64, 2.77]) or spiritual but not religious ( $M = 3.00$ , 95% CI = [2.96, 3.05]). This result suggests that, unlike other arbiters of justice, Karma is perceived to be a supernatural force. Individuals who are more inclined to believe in supernatural forces are more likely to believe in Karma, even if they are not formally exposed to Karmic theological traditions.
7. Following recommendations by the market research company who recruited participants, Canadian adults could complete the survey in either English or French. The French-language version of the survey (completed by 16.9% of Canadian participants) was translated from English by one bilingual research assistant, then the accuracy of the translation was checked by a second independent bilingual research assistant. Minor changes were made to ensure that the French survey matched the English survey. In contrast, all Indian adults completed the survey in English. Questions about state of residence, education level, income, and ethnic group were modified and tailored to Indian participants. We also included two questions about Indian participant’s confidence in speaking English, and the participant’s first language. In the final sample, the majority of Indian participants reported confidence in their ability to speak English (88.5% above scale midpoint, 6.7% at scale midpoint, and only 4.8% below scale midpoint). Given the small number of participants who reported being unconfident in their English ability, these individuals were retained in the analyses reported below.
8. Participants also completed one additional, reverse-scored item designed to assess expectations regarding legal justice. This item was omitted from the composite index of legal justice because, due to its confusing wording, its inclusion in the index produced an index of inadequate reliability ( $\alpha < .60$ ). More generally, wherever scale reliability considerations led to scoring procedures that differed from preregistered plans, we performed analyses using both the original and revised scoring procedures. In every case, the results were similar in both direction and magnitude. Therefore, we only report results using the most highly reliable composite measures.
9. There was one exception: Within the Indian sample only, the two reverse-scored items had low loadings on the one factor. In general, across various questionnaires, reverse-scored items had lower reliability within the Indian sample, suggesting that the factor analytic result within the Indian sample is indicative of a population-specific method artifact rather than a meaningfully different factor structure underlying belief in Karma.
10. Additional analyses (reported fully in the Supplemental Material) revealed that (a) justice beliefs were more strongly related to belief in Karma than to belief in God (especially in India); and (b) religious beliefs were more strongly related to belief in Karma than they are to belief in a just world (in both Canada and India). These results buttress the interpretation that belief in Karma is a conceptually unique psychological construct that represents the psychological integration of two other constructs—belief in justice and belief in a supernatural force—that in other contexts are largely unrelated to one another.
11. An additional 35 participants in the United States and 261 participants in India completed the survey but, in accordance with preregistered data exclusion criteria, were excluded from the final sample—either for failing one or more attention check items placed within the survey or for providing inappropriate answers to an open-ended question. Analyses including these participants show a similar pattern of results and are available in the Supplemental Material.
12. In addition to questionnaires relevant to the preregistered analyses, participants completed several additional measures for exploratory purposes (see Supplemental Material for details).

## Supplemental Material

Supplemental material is available online with this article.

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